

Remarks/Arguments

35 U.S.C. §112, ¶2

The Examiner has objected to claims 1-5 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner states that "it is unclear as to what being referring as 'wave guide technology' (claim 1, line 2)."

The phrase "wave guide technology" has been removed from the claims. Claim 1 has been amended to clarify that it describes a "manufacturing process for a microwave corrugated-horn waveguide antenna."

In view of the above remarks and amendments to the claims, it is respectfully submitted that this rejection has been satisfied and should be withdrawn.

35 U.S.C. §102

The Examiner has included a heading in the Office Action regarding 35 U.S.C. §102, but has not documented a related rejection. It is assumed that the inclusion of this heading was inadvertent and that no 35 U.S.C. §102 rejection was intended.

35 U.S.C. §103

Claims 1, and 3-5, stand rejected under 35 U.S.C. §103(a) as being unpatentable over Howard S. Jones, Jr. (U.S. Patent No. 3,611,396) ("Jones"). Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Jones in view of Wilson (U.S. Patent No. 4,658,258).

Among the problems addressed by the present invention is that the number of molds required for the manufacture of the various elements of a waveguide antenna can become prohibitive of high-volume, low-cost production. Moreover, the alignment and interconnection of the various elements of the antenna, in order to limit the electrical discontinuities, can lead to manufacturing constraints that impact the production cost of the antenna. (Specification, page 1)

To address this problem, the present application discloses a method for making for a microwave corrugated-horn antenna comprising a horn, a circular polarizer, and an impedance adapter forming a first, a second, and a third section respectively, the process comprising thermoforming, in a single step, using a single mold of the first, the second, and the third sections on the external surface of a block of synthetic foam by deformation of said external surface, and then metallizing the surface of the conformed block of foam in order to form the antenna.

It is respectfully asserted that Jones fails to disclose:

“thermoforming in a single step using a single mold of the first, the second, and the third sections on the external surface of a block of synthetic foam by deformation of said external surface,”

as described in currently amended claim 1.

Jones teaches a dual waveguide horn antenna “with a rigid foam having a dielectric constant approximately equal to that of air and tapered to conform to the shape of a conventional horn antenna. Two tapered walls are corrugated and all four walls are covered with a thin metallic coating of sufficient thickness to carry the RF current produced by the propagation of an electromagnetic wave through the dielectric. A metallic septum divides the dielectric into first and second waveguide sections and individual coaxial inputs are provided to each of the sections. Energy coupling between the two sections of the waveguide are significantly reduced by means of a microwave resistive material secured to the septum at the enlarged end of the dielectric. The resistive strip may comprise a carbonized substrate or an insulating material coated with the resistive film. Additionally, a thin film of paint may be applied directly to the metallic septum by various techniques including vacuum deposition.” (Jones Abstract)

Jones does not disclose thermoforming in a single step using a single mold of the first, the second, and the third sections on the external surface of a block of synthetic foam by deformation of said external surface. Instead, Jones discloses a dual waveguide horn

antenna which is provided with rigid foam shaped as a conventional horn and covered with a thin metallic copper plating. Thus, Jones fails to disclose “thermoforming in a single step using a single mold of the first, the second, and the third sections on the external surface of a block of synthetic foam by deformation of said external surface” as described in currently amended claim 1.

Wilson teaches that a “low cost tapered horn with desirable equal E and H plane pattern beamwidths is achieved with one or more annular channels in the tapered wave translation surfaces of the horn. These channels extend concentric and parallel with the axis of symmetry of the horn to permit the horn including the channels capable of the being formed using molding techniques.” (Wilson Abstract)

Wilson also does not disclose the thermoforming, in a single step, of a horn, a circular polarizer and an impedance adapter, as Wilson concerns only a horn. Furthermore, Wilson discloses that the horn is formed using molding techniques or die casting techniques. Thus, Wilson also fails to suggest or disclose “thermoforming in a single step using a single mold of the first, the second, and the third sections on the external surface of a block of synthetic foam by deformation of said external surface” as described in currently amended claim 1.

In view of the above remarks and amendments to the claims, it is respectfully submitted that there is no 35 USC 112 enabling disclosure provided by Jones or Wilson, alone or in combination, that makes the present invention as claimed in claim 1 unpatentable. Since dependent claims 2-5 are dependent from allowable independent claim 1, it is submitted that they too are allowable for at least the same reasons that claim 1 is allowable. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

Having fully addressed the Examiner's requirements, it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicant's representative at (609) 734-6804, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No fee is believed due. However, if a fee is due, please charge the additional fee to Deposit Account 07-0832.

Respectfully submitted,

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